1. Simplify the expression below and choose the interval the simplification is contained within.

$$5 - 6 \div 16 * 19 - (4 * 18)$$

A. $[-114.25, -107.25]$

B. $[76.98, 80.98]$

C. $[-78.12, -69.12]$

D. $[-69.02, -64.02]$

E. None of the above

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2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{144}{49}}$$

A. Irrational

B. Not a Real number

C. Whole

D. Rational

E. Integer

---

3. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{840}{14}}$$

A. Not a Real number

B. Irrational

C. Rational

D. Integer

E. Whole

4. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{\sqrt{143}}{6} + \sqrt{-4}i$$

A. Rational

B. Irrational

C. Pure Imaginary

D. Nonreal Complex

E. Not a Complex Number

---

5. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(7 + 3i)(-4 + 2i)$$

A. $a \in [-35, -33.3]$ and $b \in [0.3, 2.6]$

B. $a \in [-35, -33.3]$ and $b \in [-2.4, 1.6]$

C. $a \in [-24.9, -18.6]$ and $b \in [-26.5, -22.1]$

D. $a \in [-32, -27.2]$ and $b \in [5.6, 8.2]$

E. $a \in [-24.9, -18.6]$ and $b \in [24.6, 26.8]$

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6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{27 - 44i}{-5 + 8i}$$

A. $a \in [-487.16, -486.97]$ and $b \in [0, 0.7]$

B. $a \in [2.33, 2.62]$ and $b \in [4.55, 5.45]$

C. $a \in [-5.45, -5.34]$ and $b \in [-5.55, -5.15]$

D. $a \in [-5.51, -5.42]$ and $b \in [3.95, 4.45]$

E. $a \in [-5.51, -5.42]$ and $b \in [0, 0.7]$

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7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-3 + 8i)(2 - 6i)$$

A. $a \in [-7, -2]$ and $b \in [-48.7, -45.3]$

B. $a \in [-57, -50]$ and $b \in [-2.8, -1.7]$

C. $a \in [33, 47]$ and $b \in [31.5, 36.6]$

D. $a \in [-57, -50]$ and $b \in [-0.9, 2.4]$

E. $a \in [33, 47]$ and $b \in [-35.5, -30.9]$

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8. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 + 66i}{-8 - 3i}$$

A. $a \in [-270.5, -269]$ and $b \in [-7, -5.9]$

B. $a \in [1.5, 3]$ and $b \in [-7.7, -7.25]$

C. $a \in [-4.5, -3]$ and $b \in [-501.35, -500.4]$

D. $a \in [-4.5, -3]$ and $b \in [-7, -5.9]$

E. $a \in [-2.5, 0]$ and $b \in [-22.35, -21.45]$

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9. Simplify the expression below and choose the interval the simplification is contained within.

$$18 - 16^2 + 2 \div 8 * 14 \div 20$$

A. $[-238.04, -237.96]$

B. $[273.92, 274.05]$

C. $[-237.85, -237.78]$

D. $[274.15, 274.18]$

E. None of the above

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10. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-490}{0}}i + \sqrt{176}i$$

A. Pure Imaginary

B. Nonreal Complex

C. Not a Complex Number

D. Rational

E. Irrational
